This Class 521 is considered to be an integral part of Class 520 (see the Class 520 schedule for the position of this Class in schedule hierarchy). This Class retains all pertinent definitions and class lines of Class 520

SYNTHETIC RESINS (CLASS 520, SUBCLASS 1)

25 .ION-EXCHANGE POLYMER OR PROCESS OF PREPARING
26 ..Process of regenerating
27 ..Membrane or process of preparing
28 ..Previously formed solid ion-exchange polymer admixed with nonreactive material or ion-exchange polymer
29 ..Polymer characterized by defined size or shape other than bead or pearl
30 ..Chemically treated solid polymer
31 ...Solid polymer derived from ethylenically unsaturated reactant only
32 ....Treated with nitrogen-containing material
33 ....Treated with sulfur-containing material
34 ...Solid polymer derived from at least one 1,2-epoxy containing reactant
35 ...Solid polymer derived from aldehyde or derivative
36 ....Treated with nitrogen-containing material
37 ....Treated with sulfur-containing reactant
38 ..From ethylenically unsaturated reactant only
39 ..From aldehyde or derivative
40 .PROCESS OF TREATING SCRAP OR WASTE PRODUCT CONTAINING SOLID ORGANIC POLYMER TO RECOVER A SOLID POLYMER THEREFROM
40.5 ..Process of treating scrap or waste product containing at least one polymer derived from ethylenic unsaturated monomers only
41 ...Treating rubber (or rubberlike materials) or polymer derived from a monomer having at least two ethylenic unsaturated moieties
41.5 ....Treating with organic phosphorus-containing material
42 ....Treating with organic nitrogen-containing material
42.5 ....Treating with organic chalcogen-containing material
43 .....Containing organic sulfur
43.5 .....Containing carboxylic acid or anhydride group
44 .....Containing hydroxyl group
44.5 ....Treating with hydrocarbon or halogenated hydrocarbon material
45 ....Treating with steam or water
45.5 ....Treating with mechanical action and in the absence of a chemically reactive additive or solvent
46 ...Treating polymer derived from a monomer containing only carbon, hydrogen, and halogen or only carbon and halogen; or treating a polymer which has been derived from at least one hydrocarbon and which has been subsequently halogenated
46.5 ....Treating polymer derived from vinyl chloride monomer
47 ...Treating polymer derived from hydrocarbon monomers only
47.5 ..Treating polysiloxane
48 ..Treating polyester
48.5 ...Treating with alcohol
49 ..Treating polyurethane, polyurea (excluding urea-formaldehyde polymers), polyisocyanurate or polycarbodiimide
49.5 ...Treating with alcohol or amine
49.8 ..Treating polycarbonamide
50 .CELLULAR PRODUCTS OR PROCESSES OF PREPARING A CELLULAR PRODUCT, E.G., FOAMS, PORES, CHANNELS, ETC.

50.5 ..Compositions to be polymerized by wave energy in order to prepare a cellular product wherein said composition contains a rate-affecting material; or compositions to be modified by wave energy to prepare a cellular product wherein said composition contains a rate-affecting material; or processes of preparing or treating a solid polymer utilizing wave energy in order to prepare a cellular product

51 ..Processes of preparing a cellular product having an integral skin

52 ..Reticulated cellular product or processes of preparing a reticulated cellular product

53 ..Treating a cellular solid polymer by adding a material thereto which reacts with the polymer or forms a composition therewith, or products of said treating process

54 ...Treating a cellular solid polymer by adding a solid polymer or solid polymer-forming composition

55 ...Treating a cellular solid polymer by adding a material thereto which forms a composition therewith

56 ..Particle which is expandible, process of preparing an expandible particle, or process of expanding a particle to form a cellular product

57 ...Including step of surface coating a particle or process of expanding a surface coated particle

58 ...Expanding utilizing plural expansion steps

59 ...Expandible system contains two or more solid polymers or at least one solid polymer and at least one polymer-forming system

60 ...Adding expanding agent subsequent to solid polymer formation

61 ..Process of preparing a cellular product by removal of material from a solid polymer-containing matrix without expanding the matrix; composition which is nonexpandible and is designed to form a cellular product by said process; or process of preparing said composition

62 ...Mixture of solid polymers present during cell formation

63 ...Cellular product-forming process wherein the removable material is present or is produced in situ during the solid polymer formation step

64 ...Removing a liquid to form a cellular product

65 ..Process of forming a cellular product from an aqueous latex, aqueous dispersion, or aqueous emulsion containing a solid polymer; process of preparing a latex, dispersion, or emulsion containing a solid polymer which is designed to be formed into a cellular product, or composition thereof

66 ...Treating a latex, dispersions, or emulsion containing a solid polymer at 32 degrees F. or below, e.g., freezing, etc.

67 ...Adding -N=C=X material to a latex, dispersion, or emulsion containing a solid polymer

68 ...Adding fibrous material to a latex, dispersion, or emulsion containing a solid polymer

69 ...Latex, dispersion, or emulsion contains an additional solid polymer-forming system

70 ...Latex, dispersion, or emulsion contains two or more solid polymers

71 ...Solid polymer is derived from a conjugated diene monomer

72 ...Utilizing cell forming agent other than air

73 ..Process of preparing a cellular product of a plastisol of a solid polymer derived solely from ethylenically unsaturated monomers; forming a plastisol of a solid polymer derived solely from an ethylenically unsaturated monomer which is designed to be formed into a cellular product, or composition thereof

74 ...By incorporation of material in gaseous state

75 ...System contains two or more solid polymers or contains at least one solid polymer and at least one polymer-forming system

76 ..Preparing a cellular product utilizing a stated ingredient which is surface coated or is a discrete solid particle containing a fluid encapsulated therein, processes of forming an expandible composition, containing said stated ingredient or composition therefrom

77 ..Preparing a cellular product by decomposition of a solid polymer; or process of forming a composition containing a solid polymer which decomposes so as to subsequently form a cellular polymer, or composition therefrom

78 ..Preparing a cellular product by spraying a solid polymer containing material

79 ..Extruding a solid polymer containing material to form a cellular product

80 ...Including solid polymer formation in or during extruding step

81 ...System contains a mixture of solid polymer or at least one solid polymer and at least one solid polymer-forming system

82 ..Process of forming a cellular product subsequent to solid polymer formation in the presence of a stated ingredient, noncellular composition capable of forming a cellular product and containing a stated ingredient, or process of preparing same

83 ...Ingredient is asphaltic, bituminous, or water settable inorganic material, e.g., cement, plaster of Paris, etc.

84.1 ...Ingredient is protein, carbohydrate, or natural resin

85 ...Ingredient contains a boron or phosphorus atom

86 ...Ingredient is organic silicon compound

87 ...Ingredient is aldehyde or ketone

88 ...Ingredient is ether, alcohol, or inorganic alcoholate, e.g., phenol, etc.

89 ...Ingredient contains a sulfur atom

90 ...Ingredient is a heterocyclic compound

91 ...Ingredient contains a silicon atom

92 ...Ingredient contains a metal atom

93 ....Metal atom is part of an organic compound

94 ...Ingredient is a nitrogen containing compound

95 ....Nitrogen compound contains a nitrogen atom bonded to a nitrogen or oxygen atom

96 ...Ingredient contains an -O-O- group

97 ...Ingredient contains a carbon atom double-bonded to oxygen, e.g., carbon dioxide, carboxylic acid, etc.

98 ...Ingredient contains only C and H atoms, only C and halogen atoms, or only C, H, and halogen atoms

99 ..Cellular product formation prior to or during solid polymer formation in the presence of a stated ingredient other than water

100 ...Ingredient is water settable inorganic composition
101 ...Ingredient is bituminous or asphaltic material
102 ...Ingredient is a protein containing material
103 ...Ingredient contains a boron atom
104 ....Boron trihalide or complex thereof
105 ....Boron atom is part of an organic compound
106 ...Ingredient contains a phosphorus atom
107 ....Phosphorus atom is part of an organic compound
108 .....Organic phosphorus compound contains a phosphorus atom bonded to an atom other than oxygen
109.1 ...Ingredient is carbohydrate, or natural resin
110 ...Ingredient contains a silicon atom as part an organic compound
111 ....Organic silicon atom compound contains an atom other than oxygen, hydrogen, silicon, or carbon
112 ....Organic silicon compound contains an ether group
113 ...Ingredient is aldehyde or ketone
114 ...Ingredient contains a -C-X-C- group wherein X is a chalcogen atom and none of the C atoms bonded to the chalcogen are double-bonded to an additional chalcogen atom
115 ....-C-X-C- compound contains a nitrogen atom
116 .....-C-X-C- compound contains a -C-XH group wherein X is a chalcogen atom
117 ...Ingredient contains a -C-XH group wherein X is a chalcogen atom and the carbon atom is not double-bonded to a chalcogen atom, phenol, etc.
118 .....-C-XH ingredient contains a nitrogen atom
119 ...Ingredient is inorganic halogen containing material
120 ...Ingredient contains a sulfur atom
121 ....Sulfur atom is part of an organic compound
122 ...Ingredient contains a silicon atom
123 ...Ingredient contains a metal atom
124 ....Metal atom is part of an organic compound
125 .....Organic metal compound contains a Group I or Group II metal atom
126 .....Organic metal compound contains tin
127 ......Tin compound is dibutyl tin dilaurate or stannous octoate
128 ...Ingredient is a nitrogen containing compound
129 ....Nitrogen compound contains a nitrogen atom bonded to three carbon atoms and wherein none of the carbon atoms are double-bonded to oxygen
130 ...Ingredient contains a carbon atom double bonded to oxygen, e.g., carboxylic acid, etc.
131 ...Ingredient contains only carbon and hydrogen atoms, only C and halogen atoms, or only C, H, and halogen atoms
132 ....Said ingredient is substantially nonvolatile material, e.g., hydrocarbon waxes, greases, etc.
133 ...Ingredient is gaseous at ambient conditions, e.g., air, oxygen, etc.
134 ..Cellular product derived from two or more solid polymers or from at least one solid polymer and at least one polymer-forming system
135 ...At least one polymer is derived from reactant containing two or more three membered heterocyclic rings having two carbon atoms and one chalcogen atom or polymer-forming system contains the same type of reactant
136 ...At least one polymer is derived from an aldehyde or derivative or wherein the polymer-forming system contains the same type of reactant

137 ...At least one polymer is derived from a -N=C=X reactant wherein X is a chalcogen atom or wherein the polymer-forming system contains the same type of reactant
138 ...At least one polymer is derived from a polycarboxylic acid or derivative and a polyol or wherein the polymer-forming system containing the same type of reactants
139 ...At least one polymer is derived from an ethylenically unsaturated aromatic reactant or wherein the polymer-forming system contains the same type of reactant
140 ...At least one polymer is derived from reactant containing two or more ethylenic groups or wherein the polymer-forming system contains the same type of reactant
141 ..Cellular vinyl alcohol polymer
142 ..Cellular product derived from ethylenically unsaturated reactants only
143 ...From acyclic mono-unsaturated hydrocarbon as only reactant
144 ....Interpolymer
145 ...From acyclic mono-unsaturated halogenated reactant
146 ...From aromatic reactant
147 ....With oxygen or nitrogen containing reactant
148 ....With conjugated diene reactant
149 ...From oxygen containing reactant
150 ...From reactant containing two or more ethylenic unsaturated groups
151 ..Cellular polymer derived from tar, pitch, bitumen, asphalt, or plant material of unknown constitution, e.g., nut shell liquor, etc.
152 ..Cellular product derived from boron containing reactant
153 ..Cellular product derived from aluminum or heavy metal containing reactant
154 ..Cellular product derived from silicon containing reactant
155 ..Cellular product derived from a -N=C=X containing reactant wherein X is a chalcogen atom
156 ...With three-membered heterocyclic reactant containing two carbon atoms and a hetero atom (i.e., nitrogen or a chalcogen atom)
157 ...With a C-C(=X)-XH or C-C(=X)-X-C(=X)-C- reactant wherein X is a chalcogen atom, e.g., carboxylic acid or anhydride, etc.
158 ...With ketone, aldehyde, or aldehyde derivative
159 ...N=C=X reactant having at least two C-NH-C(=X)- groups, e.g., prepolymers, etc.
160 ...Two or more N=C=X reactants
161 ...N=C=X reactant contains a heterocyclic ring
162 ...N=C=X reactant contains atoms other than carbon and hydrogen and other than nitrogen and chalcogen as part of the N=C=X group
163 ...With nitrogen containing reactant
164 ....Nitrogen reactant contains a C-XH group wherein X is a chalcogen atom and wherein the C atom is not double-bonded to a chalcogen atom
165 .....Phosphorus containing reactant
166 .....Nitrogen reactant contains a nitrogen containing heterocyclic ring
167 .....Nitrogen reactant contains a N-(C-C-O)-group
168 ...With phosphorus containing reactant
169 ....Phosphorus reactant contains a -O-(C-C-O-)-group
170 ...With -XH reactant wherein X is a chalcogen atom
171 ....-XH reactant contains a halogen atom
172 ....-XH reactant contains a C=X group, e.g., carboxylic acid ester, etc.
173 .....With non -C=X containing reactant
174 ....-XH reactant contains a C-X-C group

175 .....C-X-C reactant contains a carbohydrate group
176 .....With non -C-X-C- containing reactant
177 .....C-X-C reactant contains a carbocyclic ring, e.g., aromatic, etc.
178 ..Cellular product derived from a reactant containing two or more three membered heterocyclic rings wherein two of the ring members are carbon atoms and the remaining ring member is a chalcogen atom
179 ...With -C(=X)-X containing reactant wherein X is a chalcogen atom
180 ..Cellular product derived from a phenol, phenol ether, or inorganic phenolate reactant
181 ...With reactant which is an aldehyde or aldehyde derivative
182 ..Cellular product derived from a -C-C(=X)-X containing reactant wherein X is a chalcogen atom, e.g., phthalic acid, etc.
183 ...Nitrogen containing reactant
184 ....Nitrogen reactant contains at least two amino nitrogen atoms
185 .....Carbocyclic reactant containing -C-C(=X)-X, e.g., containing carboxyl, etc.
186 ..Cellular product derived from reactant which is an aldehyde or aldehyde derivative
187 ...Nitrogen containing reactant
188 ....Nitrogen reactant contains a -N-C(=X)-N group wherein X is a chalcogen atom, e.g.,urea, etc.
189 ..Cellular product derived from reactant containing a carbon to chalcogen bond
904 **POLYURETHANE CELLULAR PRODUCT HAVING HIGH RESILIENCY OR COLD CURE PROPERTY**
905 **HYDROPHILIC OR HYDROPHOBIC CELLULAR PRODUCT**
906 **POLYURETHANE CELLULAR PRODUCT CONTAINING UNREACTED FLAME-RETARDANT MATERIAL**
907 **NONURETHANE FLAMEPROOFED CELLULAR PRODUCT**
908 **NUCLEATING AGENT FOR CELLULAR PRODUCT**
909 **BLOWING-AGENT MODERATOR, E.G., KICKERS, ETC.**
910 **PLURAL BLOWING AGENTS FOR PRODUCING NONPOLYURETHANE CELLULAR PRODUCTS**
911 **SURFACTANT FOR OTHER THAN POLYURETHANE CELLULAR PRODUCT**
912 **SEPARATED REACTIVE MATERIALS UTILIZED IN PREPARING CELLULAR PRODUCT**
913 **CELL FORMING IN ABSENCE OF EXTERNAL HEAT**
914 **POLYURETHANE CELLULAR PRODUCT FORMED FROM A POLYOL WHICH HAS BEEN DERIVED FROM AT LEAST TWO 1,2 EPOXIDES AS REACTANTS**
915 **UTILIZING ELECTRICAL OR WAVE ENERGY DURING CELL FORMING PROCESS**
916 **CELLULAR PRODUCT HAVING ENHANCED DEGRADABILITY**
917 **SPECIALIZED MIXING APPARATUS UTILIZED IN CELL FORMING PROCESS**
918 **PHYSICAL AFTERTREATMENT OF A CELLULAR PRODUCT**
919 **SINTERED PRODUCT**
920 **CELLULAR PRODUCT CONTAINING A DYE OR PIGMENT**
921 **PREPARING A NONPOLYURETHANE CELLULAR PARTICLE FROM A NONPARTICULATE MATERIAL**

CROSS-REFERENCE ART COLLECTIONS

901 **CELLULAR POLYMER CONTAINING A CARBODIIMIDE STRUCTURE**
902 **CELLULAR POLYMER CONTAINING AN ISOCYANURATE STRUCTURE**
903 **CELLULAR POLYMER HAVING REDUCED SMOKE OR GAS GENERATION**

FOREIGN ART COLLECTIONS

FOR 000 **CLASS-RELATED FOREIGN DOCUMENTS**